AIWA®

S/M Code No. 83-021 W
DATE OF ISSUE 7/1983

SERVICE MANUAL

4 BAND STEREO RADIO CASSETTE RECORDER

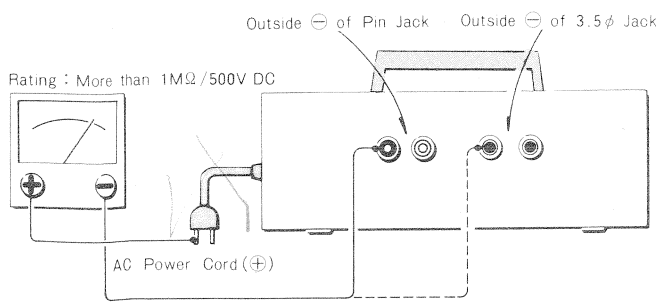
MODEL NO. CS-W330

TYPE H,HB,HU,HJ,HJB,HJR,U,UB, C,E,EB,K,KB,KR,G,ZB

Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of serivce.

1. **No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.**
2. **No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.**
3. **When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.**
4. **The following matters shall be maintained as they are, when repairing.**
   1) Soldering of lead-wire ends
      * Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
   2) Wiring and holding of lead-wires with wire-clips and binders
   3) Materials of lead-wires
      * e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
   4) Location of all kinds of insulators
   5) Setting of voltage selector switch
      * Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. **After repaired, the insulation resistance or leakage current shall be measured with 500 ± 5V D.C and shall be not less than 1MΩ.**

   Measuring Point



6. **General instructions for mechanism repair**
   1) The heads, capstan and pinch roller shall be cleaned of good quality alcohol after repaired, because dirty heads shall cause distorted sounds while dirty capstan and pinch roller shall occur wow/flutter and take-up fault.
   2) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
   3) When oiling, only one or two drops shall be applied so as not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch roller, especially.
   4) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
   5) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, mulfunction and damage.

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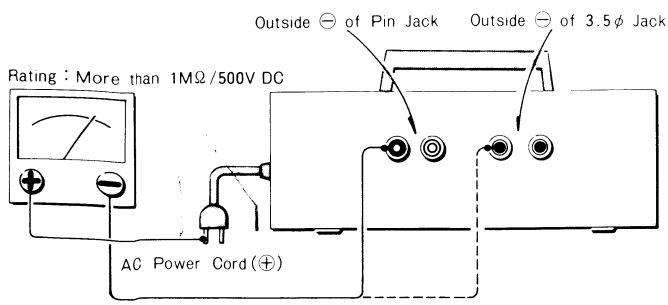

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SPECIFICATIONS

≪ GENERAL ≫

Semiconductors: 8ICS, 20 transistors, IFET, 17 diodes, 2 LED

Power source: Batteries DC 9V (SUM-1 x 6)
H, HB, HU HJ, HJR, HJB, models
AC 110 ~ 120V/220 ~ 240V
Switchable 50/60 Hz
U, UB models
AC 120V/220 ~ 240V, 50/60 Hz
C model
AC 120V, 60 Hz
E, EB, ZB models
AC 110 ~ 120V/220 ~ 240V, 50/60 Hz
K, KB, KR, G models
AC 120V/240V, 50/60 Hz

Speakers: 100mmφ x 2 (Woofer)

Power consumption: H, HB, HU, HJ, HJR, HJB, U, UB, C, G models 15W
E, EB, K, KB, KR, ZB models 17W

Output: 7W maximum (3.5W + 3.5W)
U, UB, C models
FTC Rule
1.5 watts per channel, Min.
RMS at 2.8 ohms, from 200 Hz to 10 kHz, with no more than 10% Total Harmonic Distortion

Dimensions: 511(W) x 150.5(H) x 114(D) mm
[20-1/8" x 6" x 4-1/2"]

Weight: 3.7 kg (8.14 lbs)

≪ RADIO SECTION ≫

Circuit: Superheterodyne

Frequency range: H, HB, HU, HJ, HJR, HJB, U, UB, C, G models

FM	87 ~ 109 MHz
SW_2	6.8 ~ 22.5 MHz
SW_1	2.1 ~ 7.3 MHz
MW	515 ~ 1650 MHz

E, EB, K, KR, KB, ZB models

FM	87.4 ~ 108.3 MHz
SW	5.8 ~ 18.5 MHz
MW	515 ~ 1650 kHz
LW	145 ~ 320 kHz

Intermediate frequency: H, HB, HU, HJ, HJR, HJB, U, UB, C, G models

FM	10.7 ± 0.3 MHz
SW_2, SW_1, MW	468 ± 3.5 kHz

E, EB, K, KR, KB, ZB models

FM	10.7 ± 0.3 MHz
SW, MW, LW	468 ± 3.5 kHz

Sensitivity: H, HB, HU, HJ, HJR, HJB, U, UB, C, G models

(IHF, THD 3%)	FM	18 ± 4 dB (at 88 MHz)
		16 ± 4 dB (at 100 MHz)
		16 ± 4 dB (at 108 MHz)
(S/N 10 dB)	SW_2	40 ± 5 dB (at 7.0 MHz)
		29 ± 5 dB (at 14.0 MHz)
		19 ± 5 dB (at 22.0 MHz)
(S/N 10 dB)	SW_1	42 ± 4 dB (at 2.3 MHz)
		43 ± 4 dB (at 4.0 MHz)
		45 ± 4 dB (at 7.0 MHz)
(S/N 10 dB)	MW	44 ± 3 dB (at 600 kHz)
		42 ± 3 dB (at 1000 kHz)
		42 ± 3 dB (at 1400 kHz)

E, EB, K, KR, KB models

(IHF, THD 3%)	FM	18 ± 4 dB (at 88 MHz)
		16 ± 4 dB (at 100 MHz)
		16 ± 4 dB (at 108 MHz)
(S/N 10 dB)	SW	39 ± 3 dB (at 5.9 MHz)
		32 ± 4 dB (at 12.0 MHz)
		20 ± 4 dB (at 18.0 MHz)
(S/N 10 dB)	MW	44 ± 3 dB (at 600 kHz)
		43 ± 3 dB (at 1000, 1400 kHz)
(S/N 10 dB)	LW	54 ± 3 dB (at 150 kHz)
		53 ± 3 dB (at 200 kHz)
		55 ± 3 dB (at 300 kHz)

Image rejection: H, HB, HU, HJ, HJR, HJB, U, UB, C, G models

FM	24 ± 4 dB (at 108.0 MHz)
SW_2	7 ± 3 dB (at 22.0 MHz)
SW_1	18 ± 3 dB (at 7.0 MHz)
MW	44 ± 4 dB (at 1400 kHz)

E, EB, K, KR, KB, ZB models

FM	24 ± 4 dB (at 108.0 MHz)
SW	10 ± 3 dB (at 18 MHz)
MW	35 ± 5 dB (at 1400 kHz)
LW	50 ± 5 dB (at 300 kHz)

IF rejection: H, HB, HU, HJ, HJR, HJB, U, UB, C, G models

FM	80 ± 10 dB (at 88.0 MHz)
MW	65 ± 8 dB (at 600 kHz)

E, EB, K, KR, KB, ZB models

FM	80 ± 10 dB (at 88.0 MHz)
MW	65 ± 8 dB (at 600 kHz)

AM Suppression: 48 ± 4 dB

FM stereo separation: 22 ± 3 dB (at 1 kHz)

Antenna: H, HB, HU, HJ, HJR, HJB, U, UB, C, G models

FM, SW_2	Whip antenna
SW_1, MW	Ferrite bar antenna

E, EB, K, KR, KB, ZB models

FM, SW	Whip antenna
MW, LW	Ferrite bar antenna

≪ TAPE RECORDER SECTION ≫

Track type: 4 track 2 channels

Tape speed: 4.8 cm/s ± 3% (1-7/8 ips ± 3%)

Recording system: AC bias (B deck)

Erasing system: DC erase (B deck)

Record bias frequency: 61 kHz

Erasing ratio: 62 ± 5 dB

Separation: More than 39 dB (at REC/PB)

Distortion: Less than 3% (at PB)
Less than 4% (at REC/PB)

Signal noise ratio: More than 45/43 dB (at PB, DC/AC)
More than 33/32 dB
(at REC/PB, DC/AC)

Noise level: 35 ± 10 mV
(DC, AC, REC/PB VOL MAX)
13 ± 7/15 ± 7 mV
(DC/AC, PB VOL MAX)

Frequency response: 50 ~ 12,500 Hz (NORMAL)

Head: (A deck)
PB head hard permalloy head
(B deck)
REC/PB head hard permalloy head
Erase head permalloy head

Motor: DC electric governer

Wow and Flutter: 0.2% (WRMS)

Auto stop: Mechanical full auto stop system

Pinch roller pressure: 430 ± 50 g (4.22 ± 0.49 N)

Take up torque: $35\ ^{+20}_{-10}$ g-cm ($0.34\ ^{+0.2}_{-0.098}$ mN·m)

FF & rewind torque: $110\ ^{+40}_{-30}$ g-cm ($1.078\ ^{+0.392}_{-0.294}$ mN·m)

FF & rewind time: 105 ± 20s. (C-60)

Input terminals: MIX MIC 3.5φ
AUX 3.5φ

Input sensitivity/ Impedance: MIC 1 mV/3 kΩ
AUX 300 mV/47 kΩ

Output terminal: PHONES 3.5φ

- Specifications and external appearance are subject to change without due to product improvement.

DISASSEMBLY INSTRUCTIONS

1. To remove Rod Antenna

1) After loosened the screw, push the screw by a screwdriver to pull out the rod antenna in the direction of the arrow. (See Figure 1)

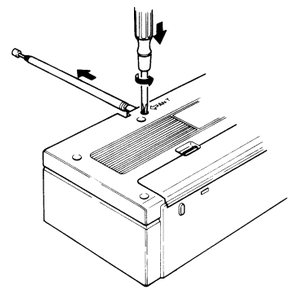


Fig. 1

2. To remove Cassette Lid

1) After opened the cassette lid, remove the lid frontwards by bending it. (See Figure 2)

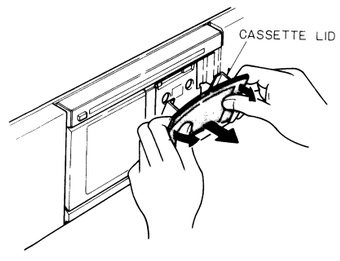


Fig. 2

3. To remove Front Cabinet

1) Remove the 9 screws. (See Figure 3)

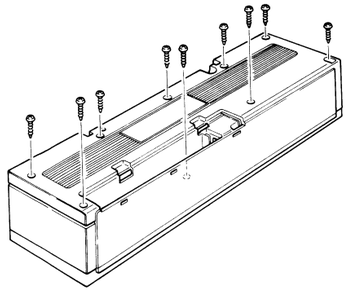


Fig. 3

2) After opened the cassette lid, remove the front cabinet in the direction of the arrow. (See Figure 4)

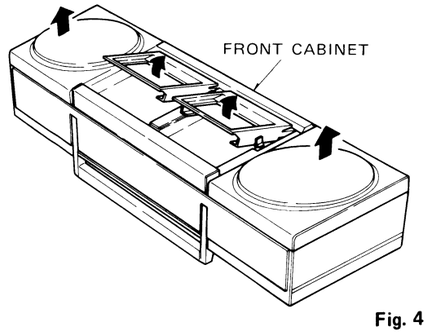


Fig. 4

(NOTE) When remounting the front cabinet, shift the dial pointer to the illustrated position to mount the front cabinet. (See Figure 5)

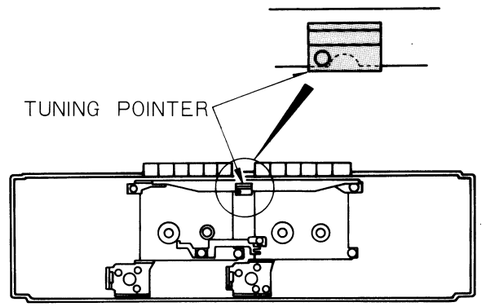


Fig. 5

4. To remove Mechanism

1) Remove the 2 screws and the dial back. (See Figure 6)

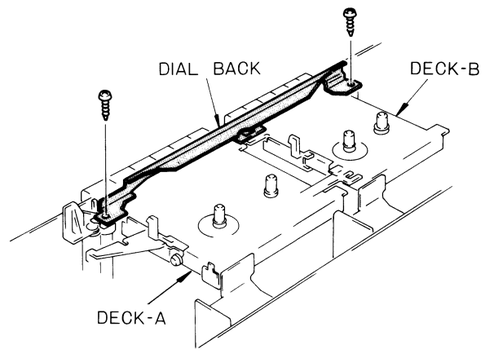


Fig. 6

2) Remove the single screw and the lever A. (See Figure 7)

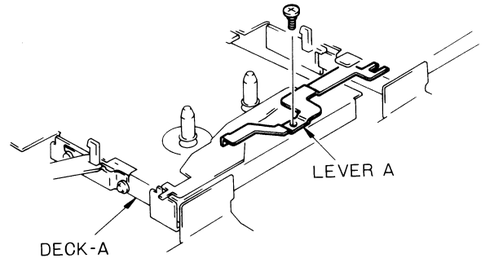


Fig. 7

(To remove DECK-A)

3) Remove the single screw and disconnect the 6 connectors. (See Figure 8)

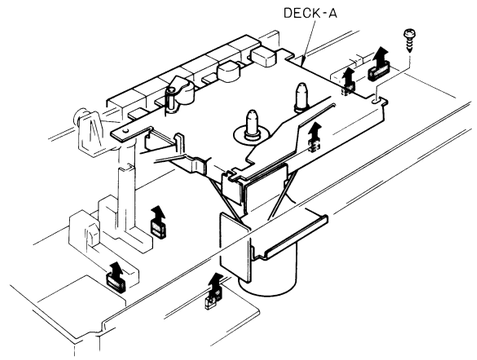


Fig. 8

(To remove DECK-B)

4) Remove the 2 screws and disconnect the connector. (See Figure 9)

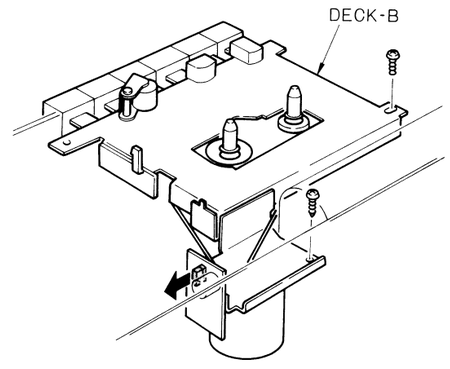


Fig. 9

5) Remove the whole mechanism of both A and B DECKs in the following procedure, 1 to 4. (See Figure 10)

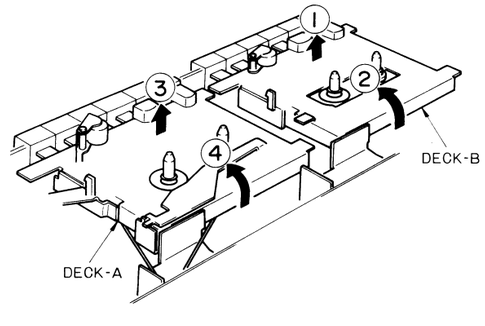


Fig. 10

(NOTE) When remounting the mechanism, make certain that the dubbing switch, lever A is hooked in the illustrated position. (See Figure 11)

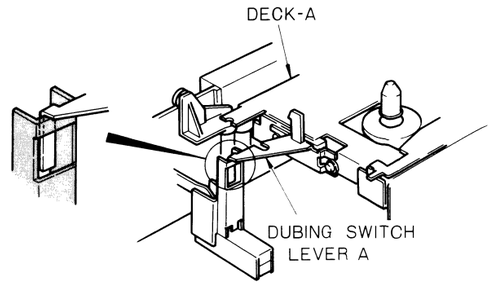


Fig. 11

5. To remove Main Circuit board

1) Remove the 2 switch knobs and the 3 screws. (See Figure 12)

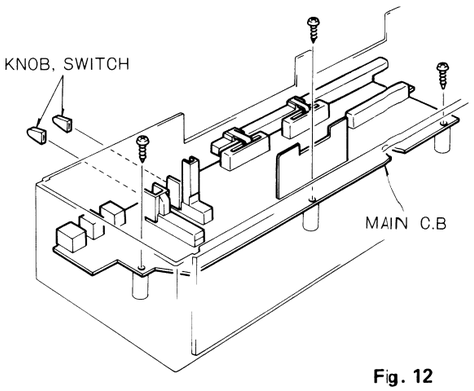


Fig. 12

6. To remove Tuner Circuit Board

1) Remove the screw on the switch-1 circuit board.
2) Remove the 3 screws, and the 1 Knob, and disconnect the 2 fasten-terminals and the flat cable to dismount the tuner circuit board. (See Figure 13)

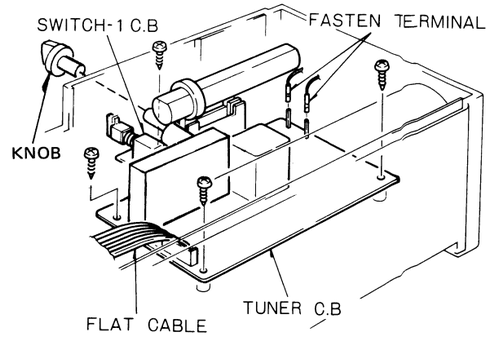
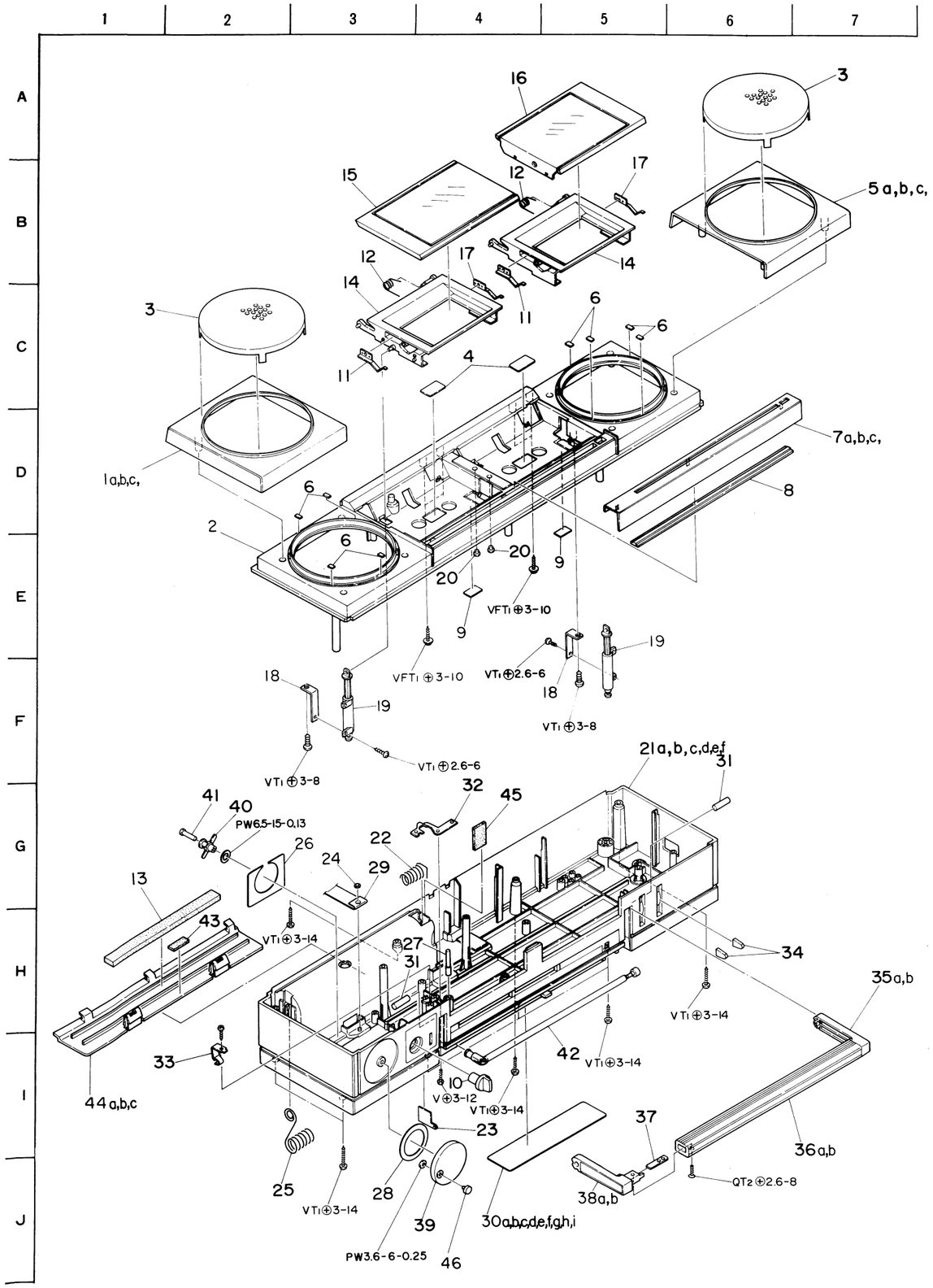


Fig. 13

EXPLODED VIEW-1



PARTS LIST

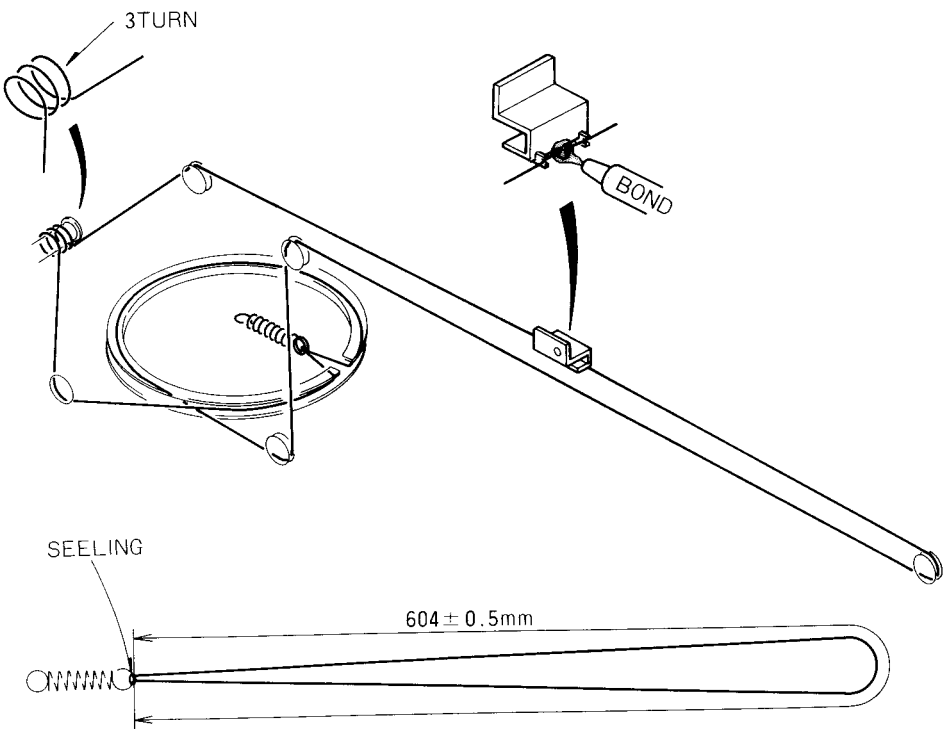
MECHANICAL PARTS LIST

[W]=White [R]=Red [B]=Black

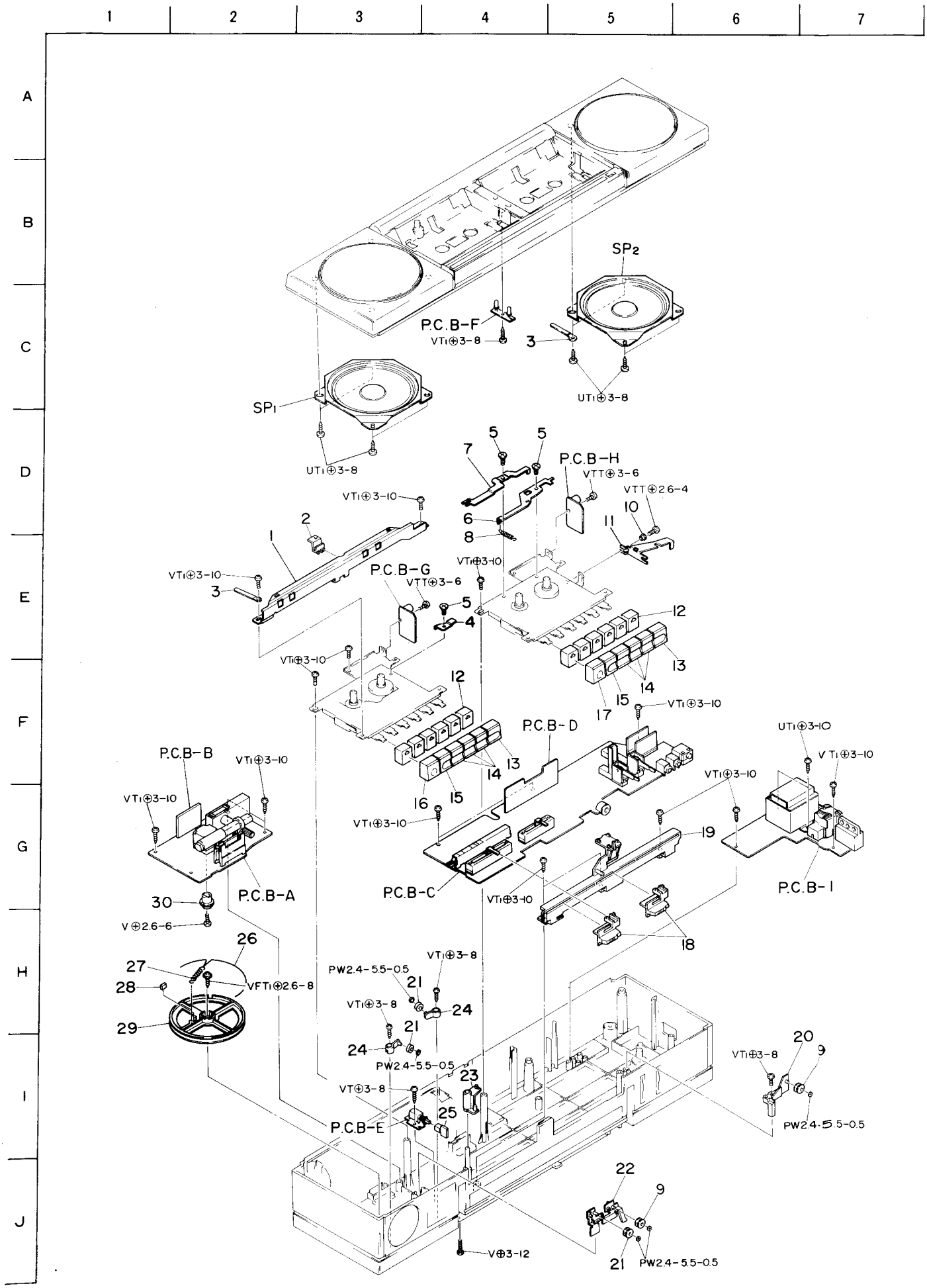
Ref. No.	Part No.	Part No. Changed to	Description	Q'ty
1-1a~9	**09-017-977-01**		**Front cabinet ass'y [W] (H, HU, HJ, U, C, G models only)**	**1**
1-1b~9	**09-017-976-01**		**Front cabinet ass'y [W] (E, K models only)**	**1**
1-1c~9	**09-017-975-01**		**Front cabinet ass'y [R] (HJ model only)**	**1**
1-1d~9	**09-017-974-01**		**Front cabinet ass'y [R] (K model only)**	**1**
1-1e~9	**09-017-973-01**		**Front cabinet ass'y [B] (H, HJ, U models only)**	**1**
1-1f~9	**09-017-972-01**		**Front cabinet ass'y [B] (E, K, Z models only)**	**1**
1-1a	81-518-002-01		Panel, Speaker R [W] (H, HU, HJ, U, C, G, E,K models only)	1
b	81-518-081-01		Panel, Speaker R [R] (HJ, K models only)	1
c	81-518-066-01		Panel, Speaker R [B] (H, HJ, U, E,K, Z models only)	1
1-2	81-518-084-01		Cabinet, Front	1
1-3	81-518-004-01		Grille, Speaker	2
1-4	81-516-026-01		Label, Tape indicator	2
1-5a	81-518-003-01		Panel, Speaker L [W] (H, HU, HJ, U, C, G, E, K models only)	1
b	81-518-082-01		Panel, Speaker L [R] (HJ, K models only)	1
c	81-518-065-01		Panel, Speaker L [B] (H, HJ, U, E, K, Z models only)	1
1-6	81-518-231-01		S cushion	8
1-7a	81-518-048-01		Plate, Dial (H, HU, HJ, U, C, G models only)	1
b	81-518-049-01		Plate, Dial (E, K, Z models only)	1
1-8	81-518-005-01		Window, Dial	1
1-9	87-080-005-01		Mylar sheet	2
1-10	81-518-078-01		Knob, Selector	1
1-11	81-518-236-01		P-spring, Cassette R	2
1-12	81-518-220-01		T-spring, Cassette L	2
1-13	81-504-581-01		Cushion	1
1-14	81-518-010-01		Cassette box	2
1-15	81-518-009-01		Window, Cassette B	1
1-16	81-518-008-01		Window, Cassette A	1
1-17	81-518-237-01		P-spring, Cassette L	2
1-18	81-518-248-01		Holder, Air-damp	2
1-19	81-504-580-01		Air-damp ass'y	2
1-20	81-518-047-01		Window, LED	2
1-21a~29	**09-017-971-01**		**Rear cabinet ass'y [W] (H, HU, HJ, U, C, G models only)**	**1**
1-21b~29	**09-017-970-01**		**Rear cabinet ass'y [W] (E, K models only)**	**1**
1-21c~29	**09-017-969-01**		**Rear cabinet ass'y [R] (HJ model only)**	**1**
1-21d~29	**09-017-968-01**		**Rear cabinet ass'y [R] (K model only)**	**1**
1-21e~29	**09-017-967-01**		**Rear cabinet ass'y [B] (H, HJ, U models only)**	**1**
1-21f~29	**09-017-966-01**		**Rear cabinet ass'y [B] (E, K, Z models only)**	**1**
1-21a	81-518-041-01		Cabinet, Rear [W] (H, HU, HJ, U, C, G models only)	1
b	81-518-073-01		Cabinet, Rear [W] (E, K models only)	1
c	81-518-074-01		Cabinet, Rear [R] (HJ model only)	1
d	81-518-075-01		Cabinet, Rear [R] (K model only)	1
e	81-518-076-01		Cabinet, Rear [B] (H, HJ, U models only)	1
f	81-518-077-01		Cabinet, Rear [B] (E, K, Z models only)	1
1-22	81-518-217-01		C-spring, Terminal	1
1-23	87-038-032-01		Terminal plate, Battery	1
1-24	87-067-080-01		PW 2-5-0.5	1
1-25	81-518-216-01		C-spring, Terminal	1
1-26	81-518-637-01		Shield sheet	1
1-27	81-518-225-01		Shaft, REC lever	1
1-28	81-518-233-01		Knob, Slider	1
1-29	82-598-033-01		Ribbon, Battery	1

Ref. No.	Part No.	Part No. Changed to	Description	Q'ty	
1-30a	81-518-033-01		Name plate, Spec. (H model only)	1	
b	81-518-086-01		Name plate, Spec. (HU model only)	1	
c	81-518-072-01		Name plate, Spec. (HJ model only)	1	
d	81-518-034-01		Name plate, Spec. (U model only)	1	
e	81-518-037-01		Name plate, Spec. (C model only)	1	
f	81-518-035-01		Name plate, Spec. (E model only)	1	
g	81-518-036-01		Name plate, Spec. (K model only)	1	
h	81-518-038-01		Name plate, Spec. (G model only)	1	
i	81-518-040-01		Name plate, Spec. (Z model only)	1	
1-31	81-518-224-01		Shaft, Handle	2	
1-32	81-518-210-01		Holder, Antenna	1	
1-33	81-504-583-01		P-spring, Handle	1	
1-34	81-518-027-11		Knob, Toggle	2	
1-35a	81-516-041-01		Bracket L, Handle [W, R]	1	
b	81-518-069-01		Bracket L, Handle [B]	1	
1-36a	81-518-030-01		Grip, Handle [W, R]	1	
b	81-518-068-01		Grip, Handle [B]	1	
1-37	81-504-572-01		Plate, Nut	2	
1-38a	81-516-042-01		Bracket R, Handle [W, R]	1	
b	81-518-070-01		Bracket R, Handle [B]	1	
1-39	81-518-011-11		Knob, Tuning	1	
1-40	81-518-209-01		Shaft, Tuning	1	
1-41	81-518-229-01		Knob, Stopper	1	
1-42	87-043-069-01		Whip antenna	1	
1-43	81-518-232-01		S cushion	1	
1-44a	81-518-025-01		Lid, Battery [W]	1	
b	81-518-080-01		Lid, Battery [R]	1	
c	81-518-083-01		Lid, Battery [B]	1	
1-45	81-518-232-01		S cushion 20-8-3	1	
1-46	81-518-063-01		Tuning nipple	1	

DIAL CORD STRINGING

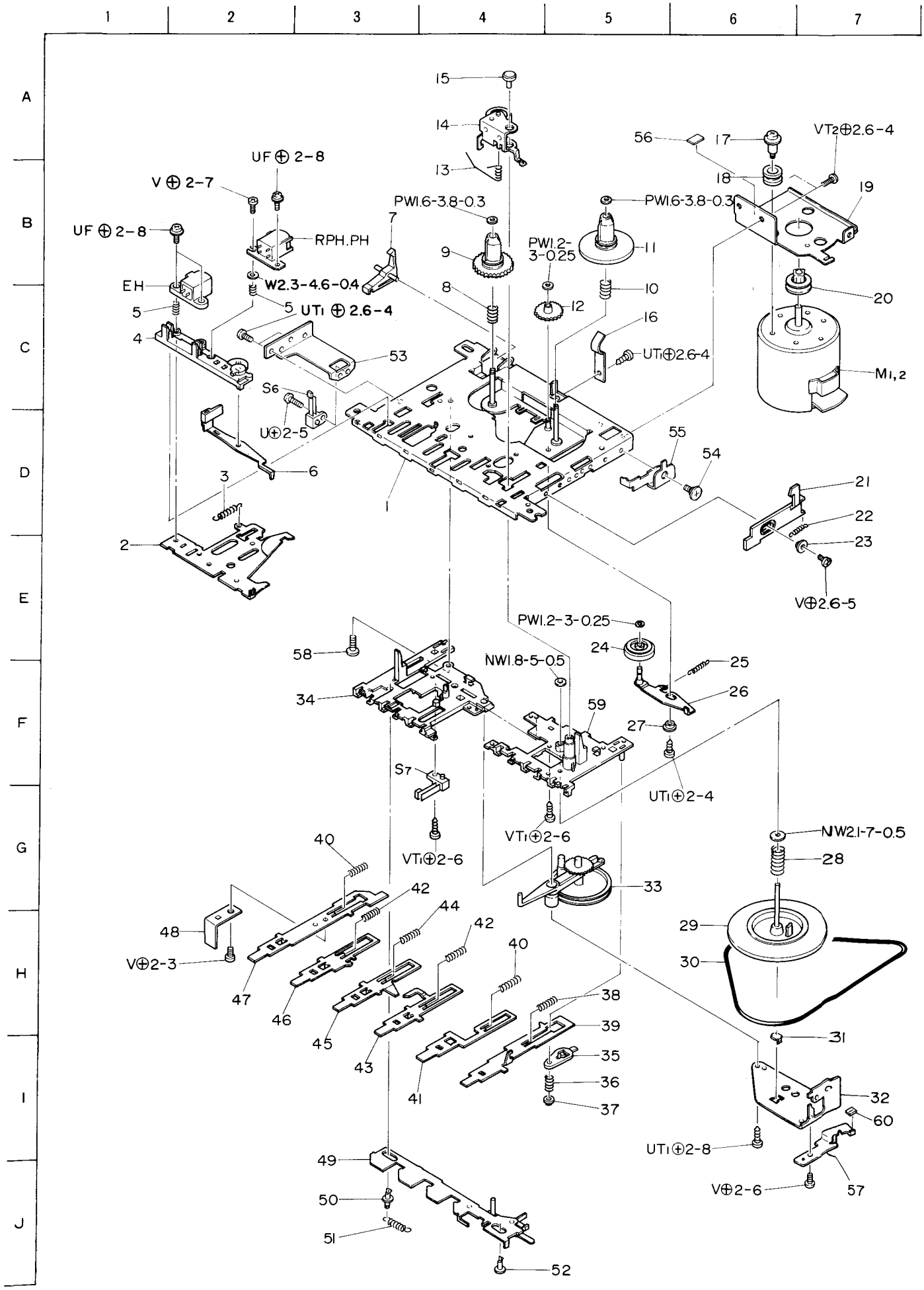


EXPLODED VIEW-2



Ref. No.	Part No.	Part No. Changed to	Description	Q'ty	
2-1	81-518-071-01		Back plate, Dial	1	
2-2	81-518-007-01		Pointer, Tuning	1	
2-3	87-038-039-01		Wire binder	2	
2-4	81-518-279-01		Holder, Arm lever	1	
2-5	81-518-278-01		Collar screw, Arm lever	1	
2-6	81-518-326-01		Lever B	1	
2-7	81-518-325-01		Lever A	1	
2-8	81-518-327-01		E-spring, FF idler	1	
2-9	87-071-031-01		Roller	2	
2-10	81-518-227-01		Flange collar	1	
2-11	81-518-226-11		Lever, Switch eject	1	
2-12	81-518-222-01		Push-button, Inner	12	
2-13	81-518-018-11		Push-button, PAUSE	2	
2-14	81-518-015-11		Push-button, REW	6	
2-15	81-518-014-11		Push-button, PLAY	2	
2-16	81-518-013-01		Push-button, REC	1	
2-17	81-518-062-01		Push-button, OPPR	1	
2-18	81-518-087-01		Knob, Slide	2	
2-19	81-518-211-01		Knob, Guide	1	
2-20	81-518-207-01		Holder C, Roller	1	
2-21	82-592-597-01		Roller 7-10-2.7	3	
2-22	81-518-206-01		Holder B, Roller	1	
2-23	81-518-221-01		Lever, REC	1	
2-24	81-518-205-01		Holder A, Roller	2	
2-25	81-518-029-01		Push-button, FM	1	
2-26	87-096-087-01		String, Dial	1	
2-27	82-541-291-01		E-spring, Dial	1	
2-28	81-518-230-01		G cushion 4-5-2.5	1	
2-29	81-518-204-01		Drum, Tuning	1	
2-30	81-511-203-21		Joint, Drum	1	

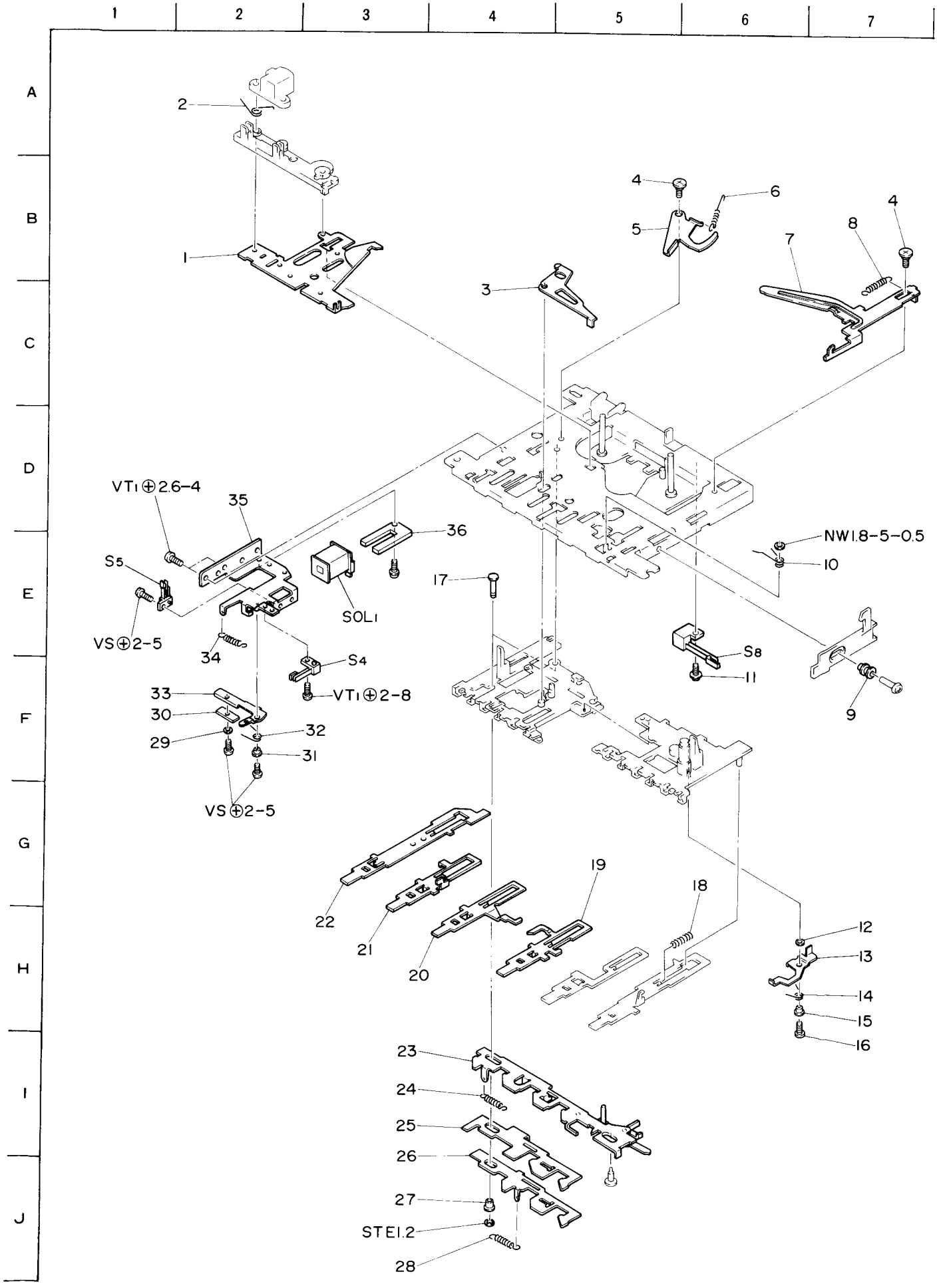
EXPLODED VIEW-3



The following parts list shows the common parts of A and B Decks, and also the exclusive parts of B Deck.

Ref. No.	Part No.	Part No. Changed to	Description	Q'ty	
3-1	81-504-200-01		Chassis ass'y	1	
3-2	81-504-203-01		Panel, Head (DECK B)	1	
3-3	81-518-263-01		E-spring, Head panel (DECK B)	1	
3-4	81-504-204-01		Head base	1	
3-5	81-504-206-01		C-spring, Azimuth	2	
3-6	81-518-262-01		Detection plate ass'y	1	
3-7	81-504-202-01		REC blocking lever (DECK B)	1	
3-8	81-504-224-01		C-spring, Back tension	1	
3-9	81-504-223-01		Supply reel platform ass'y	1	
3-10	81-504-222-01		C-spring, Back tension	1	
3-11	81-518-267-01		Take-up reel platform ass'y	1	
3-12	81-504-216-01		Gear, FF	1	
3-13	81-504-209-01		T-spring, Pinch roller	1	
3-14	81-504-208-01		Pinch roller ass'y	1	
3-15	81-504-210-01		Arm stopper, Pinch roller	1	
3-16	81-504-251-01		P-spring, Pack holder	1	
3-17	81-504-229-01		Motor screw	3	
3-18	81-504-228-01		Rubber cushion	3	
3-19	81-518-203-01		Bracket, Motor	1	
3-20	81-518-223-01		Pulley, Motor	1	
3-21	81-518-270-01		Eject slide lever	1	
3-22	81-504-231-01		E-spring, Eject lever	1	
3-23	81-504-232-01		Eject collar (DECK B)	1	
3-24	81-504-213-01		Roller T ass'y	1	
3-25	81-504-214-01		E-spring, Roller T arm	1	
3-26	81-504-212-01		Roller T arm ass'y	1	
3-27	81-504-215-01		Collar, Roller T arm	1	
3-28	81-504-220-01		C-spring, Flywheel	1	
3-29	81-504-217-01		Flywheel ass'y	1	
3-30	81-518-268-01		Belt, Main	1	
3-31	81-504-219-01		Touch plate, Flywheel	1	
3-32	81-518-265-01		Bearing plate, Flywheel	1	
3-33	81-518-264-01		RF pulley arm ass'y	1	
3-34	81-518-271-01		Base R, Button	1	
3-35	81-518-275-01		Lever, PAUSE	1	
3-36	81-504-249-01		C-spring, PAUSE lever	1	
3-37	81-518-276-01		Stopper, PAUSE lever	1	
3-38	81-504-247-01		C-spring, Button lever (DECK B)	1	
3-39	81-504-234-01		Lever, PAUSE button	1	
3-40	81-504-240-01		C-spring, Button lever	2	
3-41	81-504-235-01		Lever, STOP button	1	
3-42	81-504-242-01		C-spring, Button lever	2	
3-43	81-505-236-01		Lever, FF button (DECK B)	1	
3-44	81-504-241-01		C-spring, Button lever	1	
3-45	81-504-237-01		Lever, RWD button (DECK B)	1	
3-46	81-504-238-01		Lever, PLAY button (DECK B)	1	
3-47	81-504-239-01		Lever, REC button (DECK B)	1	
3-48	81-518-261-01		P-spring, REC	1	
3-49	81-518-273-01		Push-button actuating plate ass'y (DECK B)	1	
3-50	81-504-245-01		Shaft, Actuating plate (DECK B)	1	
3-51	81-518-274-01		E-spring, Actuating plate (DECK B)	1	
3-52	81-504-246-01		Shaft, Actuating plate	1	
3-53	81-518-280-01		Bracket, MS (DECK B)	1	
3-54	81-518-278-01		Collar screw, Arm lever	1	
3-55	81-518-277-01		Lever, PAUSE kick	1	
3-56	81-518-269-01		Felt, Anti-vibration	1	
3-57	81-518-266-01		Blocking plate, Belt vibration	1	
3-58	81-518-288-01		Collar screw Z	1	
3-59	81-518-272-01		Base L, Button	1	
3-60	81-518-246-01		Rubber, Anti-vibration	1	

EXPLODED VIEW-4



The following parts list shows the exclusive parts of A Deck only.

Ref. No.	Part No.	Part No. Changed to	Description	Q'ty
4-1	81-518-289-01		Panel, Head	1
4-2	81-518-302-01		RC spring	1
4-3	81-518-298-01		RC arm	1
4-4	81-518-301-01		Collar screw	2
4-5	81-518-299-01		Panel, Return arm	1
4-6	81-518-324-01		Spring, Return arm panel	1
4-7	81-518-300-01		Timing plate	1
4-8	81-518-303-01		Spring	1
4-9	81-518-291-01		Eject collar	1
4-10	81-518-336-01		Spring, Head panel	1
4-11	81-518-335-01		VFTT + 2 - 5	1
4-12	81-518-315-01		Spacer, Regulation plate	1
4-13	81-518-314-01		Auto, Regulation plate	1
4-14	81-518-317-01		Spring, Regulation plate	1
4-15	81-518-316-01		Metal, Regulation plate	1
4-16	81-518-331-01		QTT + 2 - 6.8 S	1
4-17	81-518-297-01		Shaft, Actuating plate	1
4-18	81-518-296-01		Spring, Button lever	1
4-19	81-518-292-01		Lever, FF button ZV	1
4-20	81-518-293-01		Lever, RWD button ZV	1
4-21	81-518-294-01		Lever, PLAY button	1
4-22	81-518-295-01		Lever, REC button	1
4-23	82-518-337-01		Push-button actuating plate	1
4-24	81-518-323-01		Spring, Actuating plate	1
4-25	81-518-319-01		Actuating plate RF	1
4-26	81-518-318-01		Actuating plate, Switch	1
4-27	81-518-320-01		Collar, Actuating plate shaft	1
4-28	81-518-322-01		Spring, Actuating plate	1
4-29	81-518-311-01		Amateur collar	1
4-30	81-518-308-01		Amateur plate	1
4-31	81-518-309-01		Collar	1
4-32	81-518-310-01		Amateur spring	1
4-33	81-518-307-01		Amateur RF	1
4-34	81-518-321-01		Spring, Actuating	1
4-35	81-518-304-01		Bracket CS	1
4-36	81-518-305-01		Core B	1

Part No.	Description
87-261-032-21	V+2-3
87-261-035-21	V+2-6
87-261-036-21	V+2-8
87-261-072-21	V+2.6-5
87-263-097-11	V+3-12
87-351-035-21	VT_1 +2-6
87-351-036-21	VT_1 +2-8
87-351-071-21	VT_1 +2.6-4
87-351-073-21	VT_1 +2.6-6
87-351-095-21	VT_1 +3-8
87-356-096-21	VT_1 +3-10
87-351-098-01	VT_1 +3-14
87-352-071-21	VT_2 +2.6-4
87-081-501-01	VTT+2.6-4
87-081-511-01	VTT+3-6
87-324-074-21	QT_2 +2.6-8
87-251-034-21	U+2-5
87-251-036-21	U+2-8
87-341-033-21	UT_1 +2-4
87-341-036-21	UT_1 +2-8

Part No.	Description
87-341-071-21	UT_1 +2.6-4
87-341-095-21	UT_1 +3-8
87-341-096-21	UT_1 +3-10
87-481-034-21	VS+2-5
87-511-096-21	VFT_1 +3-10
87-512-074-21	VFT_2 +2.6-8
87-441-001-01	STE-1.2
87-410-207-01	W2.3-4.6-0.4
87-081-994-01	PW1.2-3-0.25
87-067-100-01	PW1.6-3.8-0.3
87-067-079-01	PW2.4-5.5-0.5
87-067-082-01	PW3.6-6-0.25
87-067-083-01	PW6.7-15-0.13
87-067-101-01	NW1.8-5-0.5
87-067-102-01	NW2.1-7-0.5

■ACCESSORIES/PACKAGE LIST

Ref. No.	Part No.	Part No. Changed to	Description	Q'ty
1a	81-518-855-01		Box gift, FXN (H, HB, HU, U, UB, C, E, EB, K, KB, KR, G, ZB models only)	1
b	81-518-861-01		Box gift, FX, JN (HJ, HJB, HJR models only)	1
2	81-518-852-11		Polyform L, N	1
3	81-518-853-11		Poly-form R, N	1
4	87-056-606-01		Poly-bag	1
5a	81-518-904-01		Instructions booklet (H, HB, HJ, HJB, HJR, U, UB, C, G, ZB models only)	1
b	81-518-905-01		Instructions booklet (E, EB, K, KB, KR, ZB models only)	1
6	87-056-009-51		Distributors list (H, HB, HJ, HJB, HJR, C, CB, E, EB, K, KB, KR, G, ZB models only)	1
7	87-056-057-01		Service stations list (HU, U, UB models only)	1
8	87-056-045-01		Guarantee card (HU, U, UB models only)	1
9	87-056-050-11		Safety instructions (U, UB models only)	1
10	87-056-013-01		Guarantee card (C model only)	1
11	87-056-008-11		Label, AC power cord (K, KB, KR models only)	1
12	87-056-046-01		Lable, Power supply instruction (K, KB, KR models only)	1
13	87-056-016-01		Tag, Voltage C (K, KB, KR models only)	1
14	87-056-059-01		Guarantee card (G model only)	1
15	82-598-916-01		Sheet, Dubbing caution (K, KB, KR models only)	1
16a	82-593-968-01		AC power cord (H, HB, HU, HJ, HJB, HJR models only)	1
b	87-034-928-01		AC power cord (U, UB, C models only)	1
c	87-034-989-01		AC power cord (E, EB, ZB models only)	1
d	81-504-968-01		AC power cord (K, KB, KR models only)	1
e	81-504-967-01		AC power cord (G model only)	1
17	87-032-845-01		Siemens plug (H, HB, HU, HJ, HJB, HJR models only)	1

AIWA Co., Ltd. Tokyo Japan

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ELECTRICAL MAIN PARTS LIST

Symbol No.	Part No.	Description
≪ TUNER CIRCUIT BOARD SECTION ≫		
PCB-A	*	Tuner circuit board
IC1	87-027-912-01	IC, μPC1255C
IC2	87-027-913-01	IC, TA7640AP
IC3	87-027-867-01	IC, TA7343P
Q1,3	89-318-155-01	Transistor, 2SC1815 (GR)
Q4	89-110-155-01	Transistor, 2SA1015 (GR)
Q5	89-502-414-01	FET, 2SK241Y
D1	87-017-004-01	Diode, SD117
D2	87-027-332-01	Zener diode, HZ6B1L
L1	87-006-062-01	FM RF coil
L2	87-007-132-01	FM OSC coil
L5,12	87-005-151-01	Choke coil, 2.2μH
L6	87-006-063-01	SW2 antenna coil
L7,8	81-518-650-01	SW1/MW bar antenna coil
L9	87-007-125-01	SW2 OSC coil
L10	87-007-124-01	SW1 OSC coil
L11	87-007-123-01	MW OSC coil
L13	87-003-078-01	Choke coil, 0.22μH
VC1~4 TC1~4	87-011-138-11	PVC, 335-20P
TC5,7	87-011-146-01	Trimmer, 7pF
TC6,8	87-011-147-01	Trimmer, 11pF
CF1,2	87-008-261-01	Ceramic filter, 10.7MA5-A
CFT1	87-008-265-11	Ceramic filter transformer CFLZ-468PS
IFT1	87-008-258-01	FM IFT PS
IFT2	87-008-259-01	FM IFT (Quad) PS
IFT3	87-008-256-01	AM IFT (DET) PS
BPF1	87-030-082-01	Band pass filter, BPMF4
S11	87-031-803-01	Rotary switch (BAND SELECTOR)
SFR1	87-021-777-01	Semi-fixed resistor, 4.7kΩ-B
	87-032-964-01	Pin, 4P
	87-033-144-01	Pin, 1P
		< **Capacitors** >
C33	87-015-697-01	3.3μF 50V Electrolytic
C35	87-014-057-81	1000pF PP
C39,40	87-015-695-01	1μF 50V Electrolytic
C58	87-014-045-81	330pF PP
≪ SWITCHING CIRCUIT BOARD SECTION ≫		
PCB-B	*	Switching circuit board
Q8	89-318-155-01	Transistor, 2SC1815 (GR)
	87-049-115-01	Pin, 5P
		< **Capacitor** >
C62	87-015-695-01	1μF 50V Electrolytic
≪ MAIN CIRCUIT BOARD SECTION ≫		
PCB-C	*	Main circuit board
IC1,2	87-027-910-01	IC, μPC1228H
IC5	87-027-950-01	IC, LA-4126T
Q1,2,3,4, 5,6,7,8, 9,10,14	89-318-154-01	Transistor, 2SC1815 (Y)
Q11,12	89-320-011-21	Transistor, 2SC2001K (L)
Q15	89-313-833-01	Transistor, 2SC1383 (R)
D5,6,7,8, 9,12	87-027-097-01	Diode, 1S1555
D13	87-027-555-01	Zener diode, HZ5C2

Symbol No.	Part No.	Description
L1,2,5,6	87-003-084-09	Choke coil, 5.6mH
L3,4	81-511-628-01	Bias filter
L7	81-518-615-01	Bias OSC coil
VR1	81-518-609-11	Slide volume, 20kΩ-D (TONE)
VR2	81-518-608-11	Slide volume, 20kΩ-A (VOLUME)
J1,2	87-049-084-01	Jack, 3.5φ W/switch [AUX, L(L+R), AUX, R]
J4	87-049-254-01	Jack, 3.5φ (PHONES)
S1	81-518-614-01	Slide switch (REC/PB)
S2	81-518-648-01	Lever switch (FUNCTION)
S3	81-518-611-01	Lever switch (DUBBING)
	81-516-615-01	Heatsink
ECM	87-041-036-01	ECM
PIN1,2,8	87-049-034-01	Pin, 4P
PIN5,6	87-049-080-01	Pin, 2P
PIN7	87-049-050-01	Pin, 6P
PIN11	81-518-633-01	LP Connector Ass'y, 3P
		< **Resistors** >
⚠R115	87-029-119-01	100Ω 1/4W Fuse resistor
R136	87-025-266-01	4.7Ω 1/4W Nonflammable
		< **Capacitor** >
C122	87-014-057-01	1000pF PP
≪ IC CIRCUIT BOARD SECTION ≫		
PCB-D	*	IC circuit board
IC3,4	87-027-952-01	IC, M51544
D3,4	87-027-097-01	Diode, 1S1555
PIN	87-049-114-01	Pin, 4P
PIN	87-049-119-01	Pin, 9P
≪ SWITCH-1 CIRCUIT BOARD SECTION ≫		
PCB-E	*	Switch-1 circuit board
S10	87-031-761-01	Push switch (FM MODE)
≪ LED CIRCUIT BOARD SECTION ≫		
PCB-F	*	LED circuit board
D1,2	87-027-724-01	LED, TLR-113A (OPERATE/BATT, DUBBING)
≪ MOTOR-1 CIRCUIT BOARD SECTION ≫		
PCB-G	*	Motor-1 circuit board
D1	82-596-799-01	Diode, 1N4002
L1	87-003-080-01	Choke coil, 36μH
PIN8	87-049-034-01	Pin, 4P
		< **Resistor** >
⚠R1	87-029-108-01	1Ω 1/2W Fuse resistor
≪ MOTOR-2 CIRCUIT BOARD SECTION ≫		
PCB-H	*	Motor-2 circuit board
D1	82-596-799-01	Diode, 1N4002
L1	87-003-080-01	Choke coil, 36μH
		< **Resistor** >
⚠R1	87-029-108-01	1Ω 1/2W Fuse resistor
≪ POWER CIRCUIT BOARD SECTION ≫		
⚠PCB-I	*	Power circuit board
⚠T1	81-518-653-01	Power transformer (H, HB, HU, HJ, HJR, HJB, U, UB, C models only)
⚠T1	81-518-654-01	Power transformer (G model only)

Symbol No.	Part No.	Description
Q1,2	89-318-154-01	Transistor, 2SC1815 (Y)
D1,2,3,4	82-596-799-01	Diode, 1N4002
⚠J5	87-032-954-01	AC jack (H, HB, HU, HJ, HJR, HJB, U, UB, C models only)
⚠J5	87-032-977-01	AC jack (G model only)
⚠S9	87-031-466-01	Slide switch (VOLTAGE SELECTOR)
SFR1,2,3	87-021-595-01	Semi-fixed resistor, 5kΩ-B
PIN9,10	87-049-080-01	Pin, 2P
≪ MISCELLANEOUS ≫		
PH, RPH	87-046-225-01	PB head (A DECK), REC/PB head (B DECK)
EH	87-046-133-01	Erase head (B DECK)
M1,2	87-045-203-01	Motor (A DECK, B DECK)
	81-518-290-01	Dummy head (A DECK)
SP1,2	81-518-652-01	Speaker
S4	81-581-312-01	Leaf switch (A DECK MOTOR)
S5,7	81-504-252-01	Leaf switch (A DECK·POWER, B DECK·POWER)
S6	87-031-548-01	Leaf switch (B DECK·MOTOR)
S8	81-518-313-01	Leaf switch (A DECK·F/R)
CON1	89-051-022-01	Connector ass'y, Speaker, 4P
CON2	89-051-023-01	Connector ass'y, POWER A, 4P
CON5	89-051-019-01	Connector ass'y, F/R, 2P
CON6	89-051-018-01	Connector ass'y, EH, 2P
CON7	81-518-623-01	Connector ass'y, RPH, 6P
CON8	89-051-024-01	Connector ass'y, POWER B, 4P
CON9	89-051-020-01	Connector ass'y, MOTOR A, 2P
CON10	89-051-021-01	Connector ass'y, MOTOR B, 2P
CON11	81-518-634-01	LP connector ass'y (LED) 3P

⚠ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.

Combination circuit board A 81-516-651-11
PCB-A 81-516-652-11
PCB-B 81-516-654-11
Combination circuit board B 81-518-639-01
PCB-C 81-518-640-01
PCB-E 81-518-641-01
PCB-F 81-518-643-01
Combination circuit board C 81-518-644-01
PCB-D 81-518-646-01
PCB-G 81-518-645-01
PCB-H 81-518-645-01
PCB-I 81-518-647-01

● Ceramic capacitor
87-018-□□□-01

Capacitor	Part No.
5.6PF	006
6.8PF RH	067
8.2PF	008
12PF CH	055
12PF SL	010
18PF	014
18PF UJ	083
22PF SL	016
47PF	024
56PF UJ	091
100PF	032
220PF	036
330 PF	038
470PF	040
680PF	042
1,000PF	044
1,500PF K	094
0.01μF	047
0.01μF K	095

0.022μF 87-012-105-01

Symbol No.	Part No.	Description
L1,2,5,6	87-003-084-09	Choke coil, 5.6mH
L3,4	81-511-628-01	Bias filter
L7	81-518-615-01	Bias OSC coil
VR1	81-518-609-11	Slide volume, 20kΩ-D (TONE)
VR2	81-518-608-11	Slide volume, 20kΩ-A (VOLUME)
J1,2	87-049-084-01	Jack, 3.5φ W/switch [AUX, L(L+R), AUX, R]
J4	87-049-254-01	Jack, 3.5φ (PHONES)
S1	81-518-614-01	Slide switch (REC/PB)
S2	81-518-648-01	Lever switch (FUNCTION)
S3	81-518-611-01	Lever switch (DUBBING)
	81-516-615-01	Heatsink
ECM	87-041-036-01	ECM
PIN1,2,8	87-049-034-01	Pin, 4P
PIN5,6	87-049-080-01	Pin, 2P
PIN7	87-049-050-01	Pin, 6P
PIN11	81-518-633-01	LP Connector Ass'y, 3P
		< **Resistors** >
⚠R115	87-029-119-01	100Ω 1/4W Fuse resistor
R136	87-025-266-01	4.7Ω 1/4W Nonflammable
		< **Capacitor** >
C122	87-014-057-01	1000pF PP

≪ IC CIRCUIT BOARD SECTION ≫

PCB-D	*	IC circuit board
IC3,4	87-027-952-01	IC, M51544
D3,4	87-027-097-01	Diode, 1S1555
PIN	87-049-114-01	Pin, 4P
PIN	87-049-119-01	Pin, 9P

≪ SWITCH-1 CIRCUIT BOARD SECTION ≫

PCB-E	*	Switch-1 circuit board
S10	87-031-761-01	Push switch (FM MODE)

≪ LED CIRCUIT BOARD SECTION ≫

PCB-F	*	LED circuit board
D1,2	87-027-724-01	LED, TLR-113A (OPERATE/ BATT, DUBBING)

≪ MOTOR-1 CIRCUIT BOARD SECTION ≫

PCB-G	*	Motor-1 circuit board
D1	82-596-799-01	Diode, 1N4002
L1	87-003-080-01	Choke coil, 36μH
PIN8	87-049-034-01	Pin, 4P
		< **Resistor** >
⚠R1	87-029-108-01	1Ω 1/2W Fuse resistor

≪ MOTOR-2 CIRCUIT BOARD SECTION ≫

PCB-H	*	Motor-2 circuit board
D1	82-596-799-01	Diode, 1N4002
L1	87-003-080-01	Choke coil, 36μH
		< **Resistor** >
⚠R1	87-029-108-01	1Ω 1/2W Fuse resistor

≪ POWER CIRCUIT BOARD SECTION ≫

⚠PCB-I	*	Power circuit board
⚠T1	81-518-653-01	Power transformer (H, HB, HU, HJ, HJR, HJB, U, UB, C models only)
⚠T1	81-518-654-01	Power transformer (G model only)

Symbol No.	Part No.	Description
Q1,2	89-318-154-01	Transistor, 2SC1815 (Y)
D1,2,3,4	82-596-799-01	Diode, 1N4002
⚠J5	87-032-954-01	AC jack (H, HB, HU, HJ, HJR, HJB, U, UB,C models only)
⚠J5	87-032-977-01	AC jack (G model only)
⚠S9	87-031-466-01	Slide switch (VOLTAGE SELECTOR)
SFR1,2,3	87-021-595-01	Semi-fixed resistor, 5kΩ-B
PIN9,10	87-049-080-01	Pin, 2P

≪ MISCELLANEOUS ≫

PH, RPH	87-046-225-01	PB head (A DECK), REC/PB head (B DECK)
EH	87-046-133-01	Erase head (B DECK)
M1,2	87-045-203-01	Motor (A DECK, B DECK)
	81-518-290-01	Dummy head (A DECK)
SP1,2	81-518-652-01	Speaker
S4	81-581-312-01	Leaf switch (A DECK MOTOR)
S5,7	81-504-252-01	Leaf switch (A DECK·POWER, B DECK·POWER)
S6	87-031-548-01	Leaf switch (B DECK·MOTOR)
S8	81-518-313-01	Leaf switch (A DECK·F/R)
CON1	89-051-022-01	Connector ass'y, Speaker, 4P
CON2	89-051-023-01	Connector ass'y, POWER A, 4P
CON5	89-051-019-01	Connector ass'y, F/R, 2P
CON6	89-051-018-01	Connector ass'y, EH, 2P
CON7	81-518-623-01	Connector ass'y, RPH, 6P
CON8	89-051-024-01	Connector ass'y, POWER B, 4P
CON9	89-051-020-01	Connector ass'y, MOTOR A, 2P
CON10	89-051-021-01	Connector ass'y, MOTOR B, 2P
CON11	81-518-634-01	LP connector ass'y (LED) 3P

● **Ceramic capacitor**
87-018-□□□-01

Capacitor	Part No.
5.6PF	006
6.8PF RH	067
8.2PF	008
12PF CH	055
12PF SL	010
18PF	014
18PF UJ	083
22PF SL	016
47PF	024
56PF UJ	091
100PF	032
220PF	036
330 PF	038
470PF	040
680PF	042
1,000PF	044
1,500PF K	094
0.01μF	047
0.01μF K	095

0.022μF 87-012-105-01

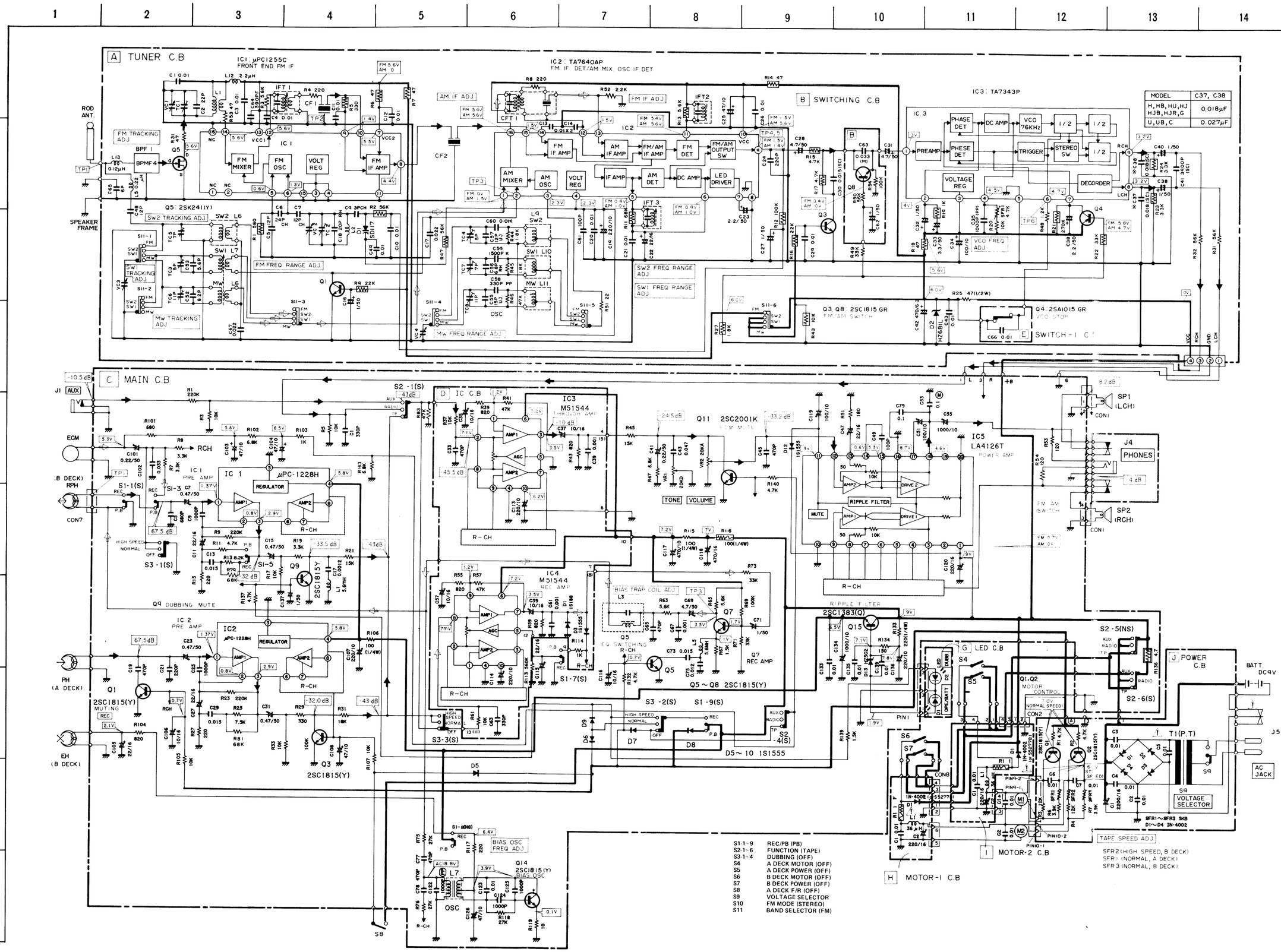
⚠ Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

Note; Combination Circuit Board
The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.

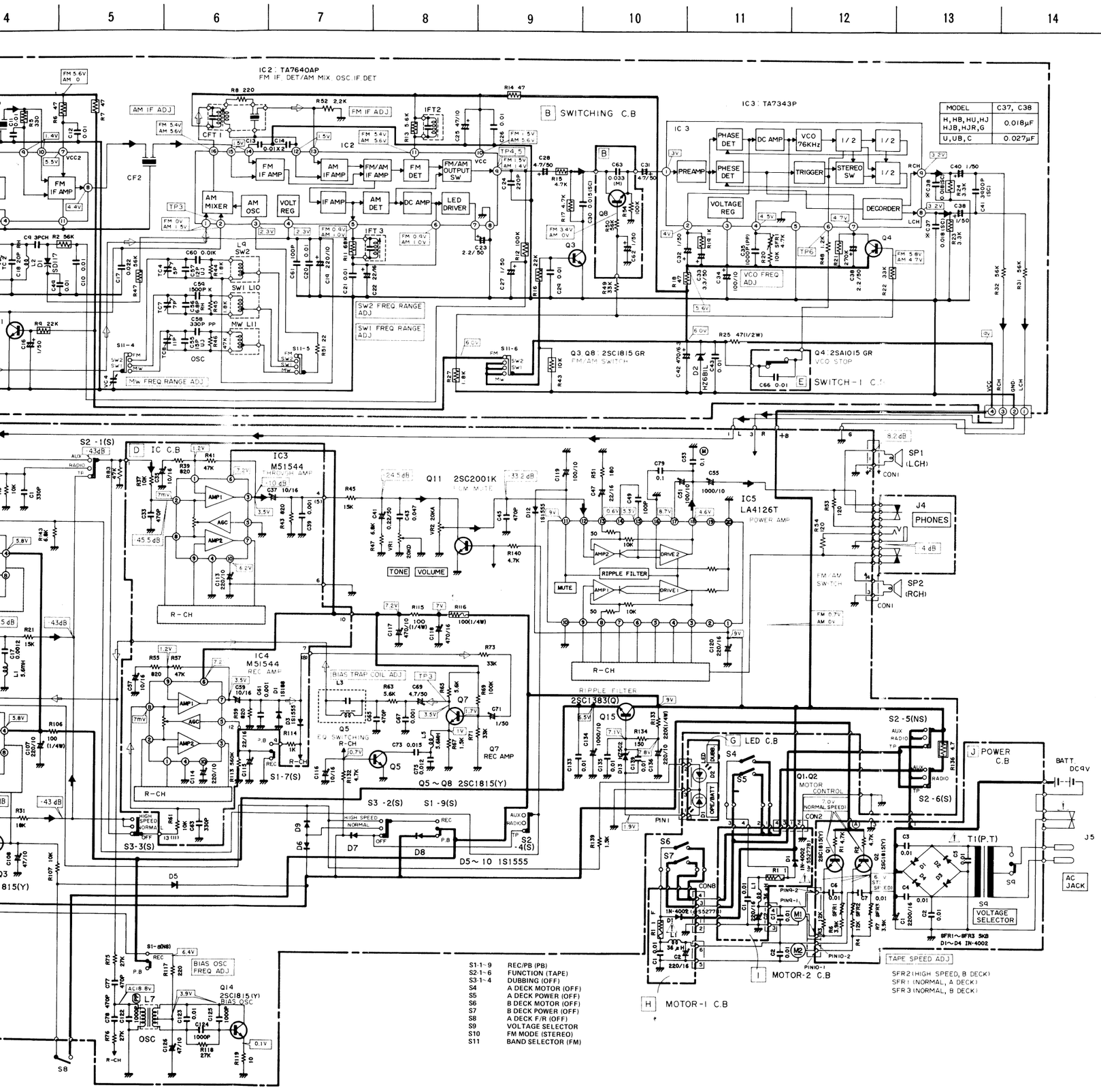
Combination circuit board A 81-516-651-11
PCB-A 81-516-652-11
PCB-B 81-516-654-11
Combination circuit board B 81-518-639-01
PCB-C 81-518-640-01
PCB-E 81-518-641-01
PCB-F 81-518-643-01
Combination circuit board C 81-518-644-01
PCB-D 81-518-646-01
PCB-G 81-518-645-01
PCB-H 81-518-645-01
PCB-I 81-518-647-01

CS-W330 H, HB, HJ, HJB, HJR, HU, U, UB, C, G CS-W330 H, HB, HJ, HJB, HJR, HU, U, UB, C, G

SCHEMATIC DIAGRAM



NOT
1)
2)
3)
4)
5)
6)
7)
8)



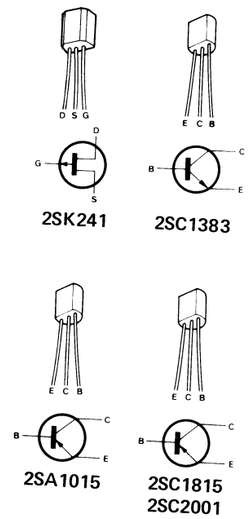
MODEL	C37, C38
H, HB, HU, HJ HJB, HJR, G	0.018μF
U, UB, C	0.027μF

NOTES:

1) ■ B (+) power supply
2) ➡ Signal path
   ⇢ Rec path, AM signal path.
3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
   But ( ) is with recording.
   An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
4) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectric strength of less than 50WV.
6) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
7) Ceramic capacitor symbols:
   - For temperature compensation (SL)
   - High dielectric constant system (YY)
   - High dielectric constant system (YW, YP, YZ)
   - Semiconductor ceramic
   - For temperature compensation (SH)
8) Explanation of symbols
   - (M) Mylar capacitor
   - (A) Aluminum solid capacitor
   - (PP) Polypropylene film capacitor
   - (BP) Bi-polarized capacitor
   - Printed resistor
   - Fuse resistor

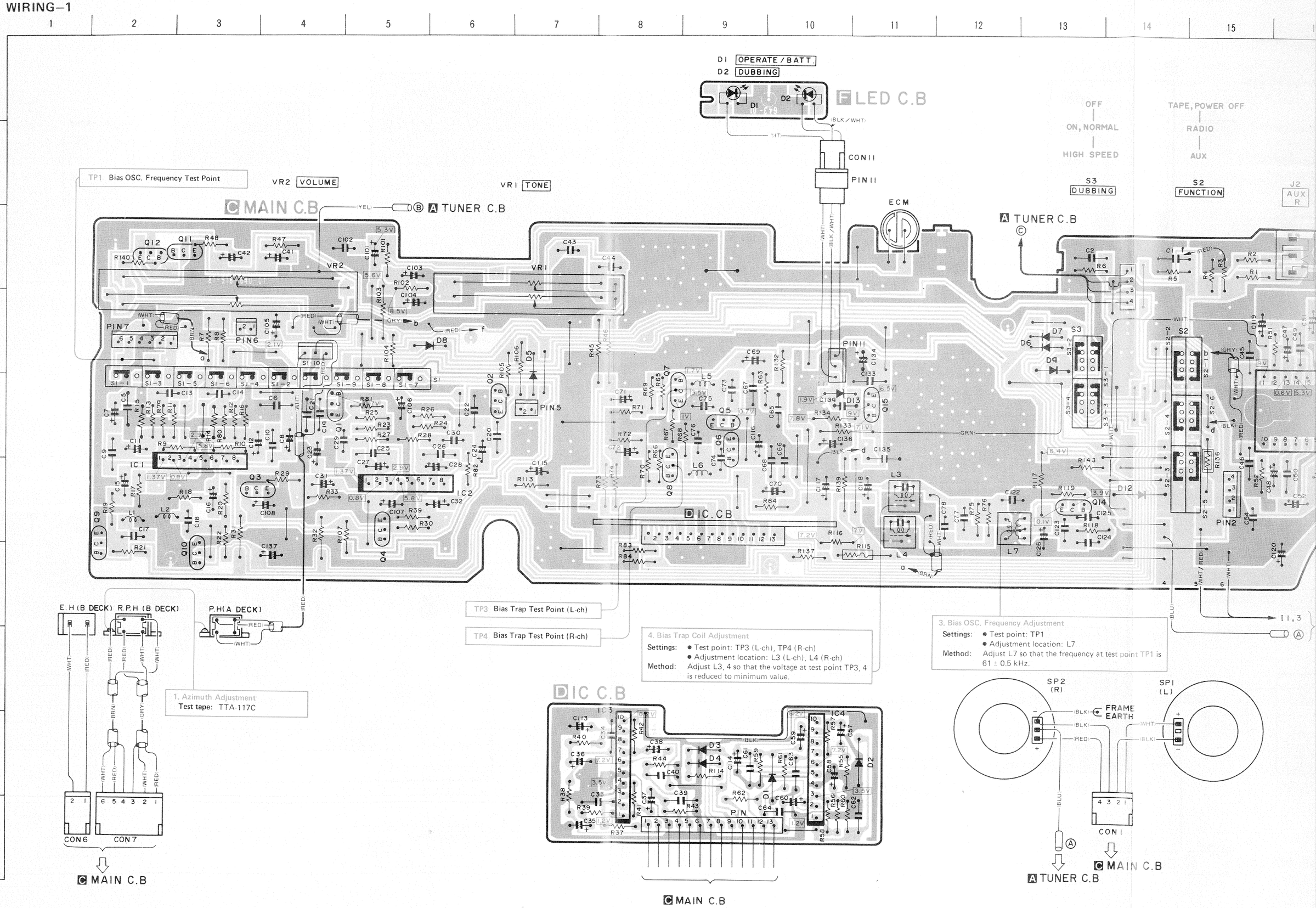
⚠ Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

- This schematic diagram is subject to change without notice in the interests of improved performance.



NOTES (1) Earth pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

WIRING–1



NOTES (1) Earth pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

D1 OPERATE / BATT.
D2 DUBBING
F LED C.B
CON11
PIN11
ECM
OFF
ON, NORMAL
HIGH SPEED
S3 DUBBING
TAPE, POWER OFF
RADIO
AUX
S2 FUNCTION
J2 AUX R
J1 AUX L,(L+R)
J4 PHONES
VR2 VOLUME
VR1 TONE
MAIN C.B
A TUNER C.B
PIN6
PIN5
PIN1
PIN2
IC5
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q14 Q15
D1 D2 D3 D4 D5 D6 D7 D8 D9 D12 D13
L3 L4 L5 L6 L7
D IC.CB
IC3 IC4
C IC C.B
C MAIN C.B
A TUNER C.B
I POWER C.B
SP2 (R)
SP1 (L)
FRAME EARTH
CON1
TP3 Bias Trap Test Point (L-ch)
TP4 Bias Trap Test Point (R-ch)

4. Bias Trap Coil Adjustment
Settings: • Test point: TP3 (L-ch), TP4 (R-ch)
• Adjustment location: L3 (L-ch), L4 (R-ch)
Method: Adjust L3, 4 so that the voltage at test point TP3, 4 is reduced to minimum value.

3. Bias OSC. Frequency Adjustment
Settings: • Test point: TP1
• Adjustment location: L7
Method: Adjust L7 so that the frequency at test point TP1 is 61 ± 0.5 kHz.

NOTES (1) Earth pattern Printed resistor pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
But ( ) is with AM reception.

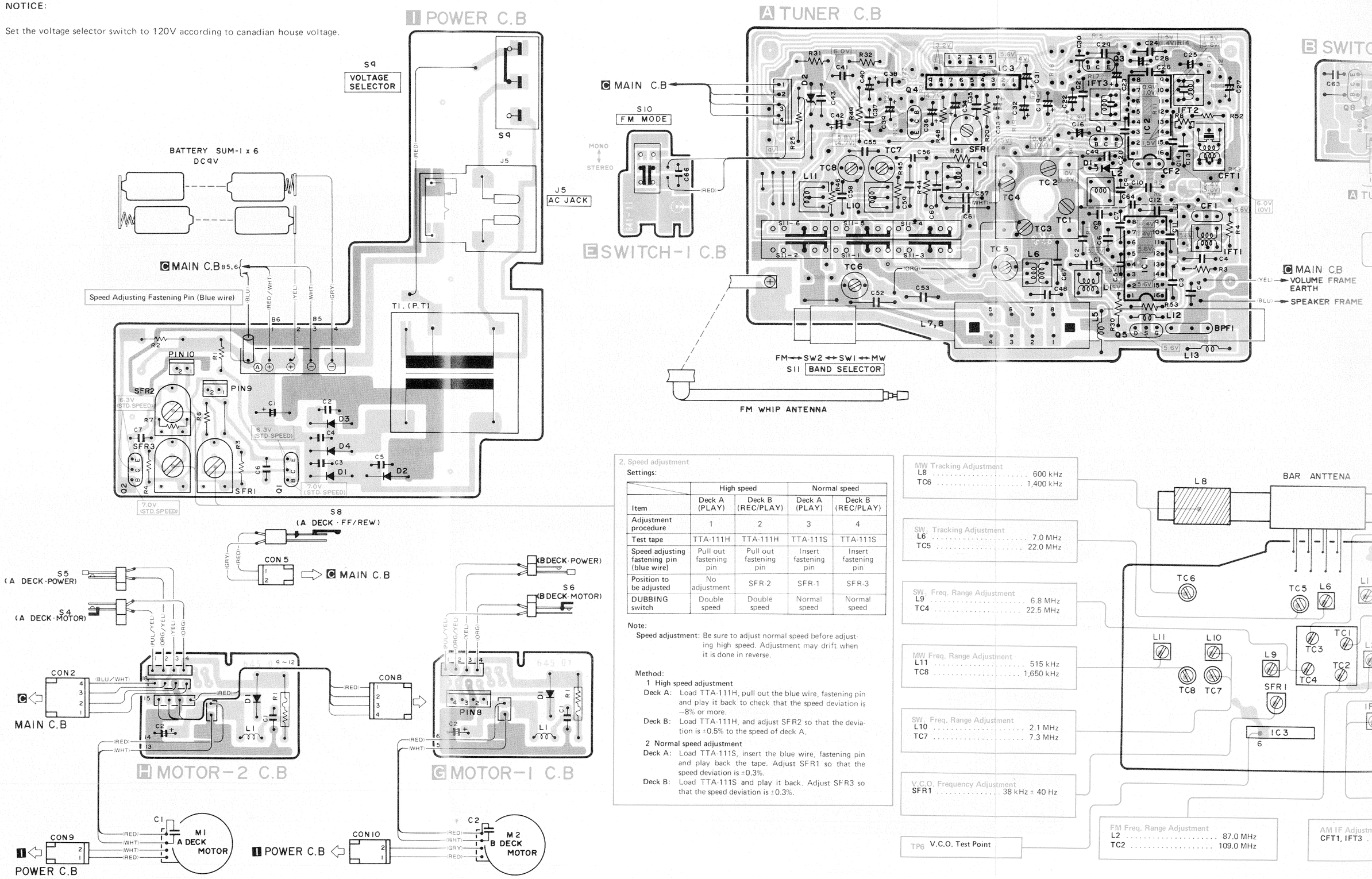
CS-W330 H, HB, HJ, HJB, HJR, HU, U, UB, C, G

CS-W330 H, HB, HJ, HJB, HJR, HU, U, UB, C, G

WIRING–2

NOTICE:

Set the voltage selector switch to 120V according to canadian house voltage.



2. Speed adjustment

Settings:

	High speed		Normal speed	
Item	Deck A (PLAY)	Deck B (REC/PLAY)	Deck A (PLAY)	Deck B (REC/PLAY)
Adjustment procedure	1	2	3	4
Test tape	TTA-111H	TTA-111H	TTA-111S	TTA-111S
Speed adjusting fastening pin (blue wire)	Pull out fastening pin	Pull out fastening pin	Insert fastening pin	Insert fastening pin
Position to be adjusted	No adjustment	SFR-2	SFR-1	SFR-3
DUBBING switch	Double speed	Double speed	Normal speed	Normal speed

Note:

Speed adjustment: Be sure to adjust normal speed before adjusting high speed. Adjustment may drift when it is done in reverse.

Method:

1 High speed adjustment

Deck A: Load TTA-111H, pull out the blue wire, fastening pin and play it back to check that the speed deviation is −8% or more.

Deck B: Load TTA-111H, and adjust SFR2 so that the deviation is ±0.5% to the speed of deck A.

2 Normal speed adjustment

Deck A: Load TTA-111S, insert the blue wire, fastening pin and play back the tape. Adjust SFR1 so that the speed deviation is ±0.3%.

Deck B: Load TTA-111S and play it back. Adjust SFR3 so that the speed deviation is ±0.3%.

MW Tracking Adjustment
L8 ..... 600 kHz
TC6 ..... 1,400 kHz

SW. Tracking Adjustment
L6 ..... 7.0 MHz
TC5 ..... 22.0 MHz

SW. Freq. Range Adjustment
L9 ..... 6.8 MHz
TC4 ..... 22.5 MHz

MW Freq. Range Adjustment
L11 ..... 515 kHz
TC8 ..... 1,650 kHz

SW. Freq. Range Adjustment
L10 ..... 2.1 MHz
TC7 ..... 7.3 MHz

V.C.O. Frequency Adjustment
SFR1 ..... 38 kHz ± 40 Hz

TP6 V.C.O. Test Point

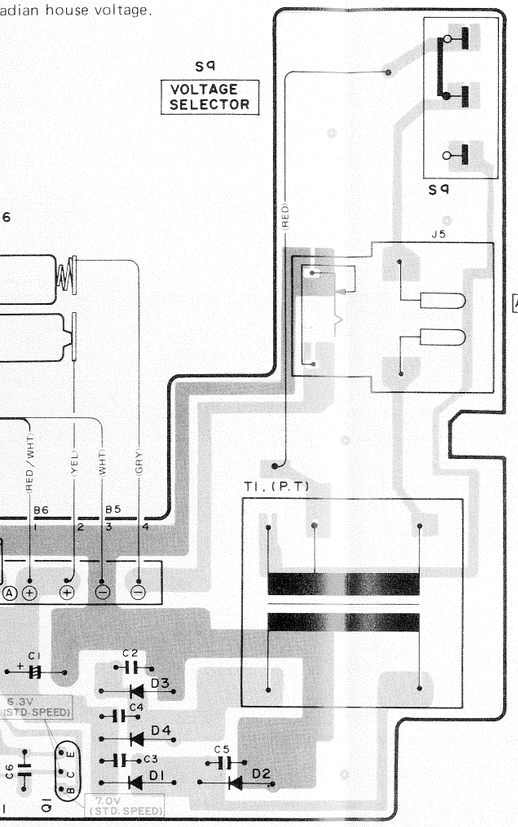
FM Freq. Range Adjustment
L2 ..... 87.0 MHz
TC2 ..... 109.0 MHz

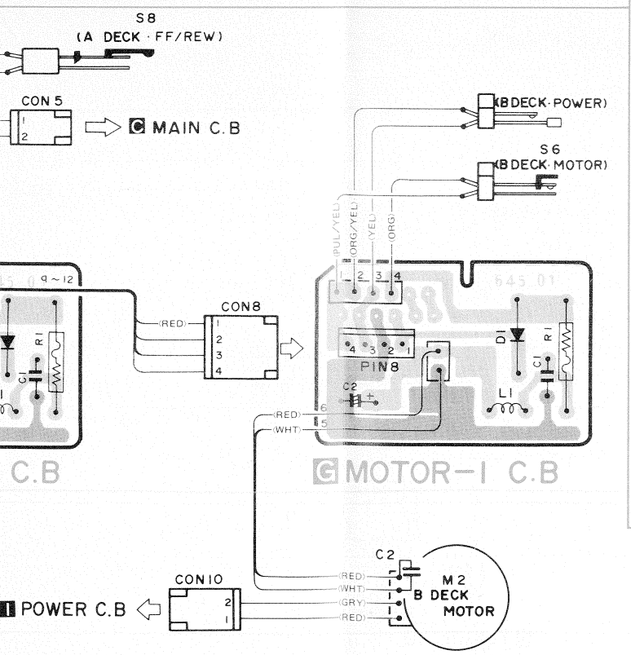
AM IF Adjustment
CFT1, IFT3 ....

S (1) Earth pattern Printed resistor pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
But ( ) is with AM reception.

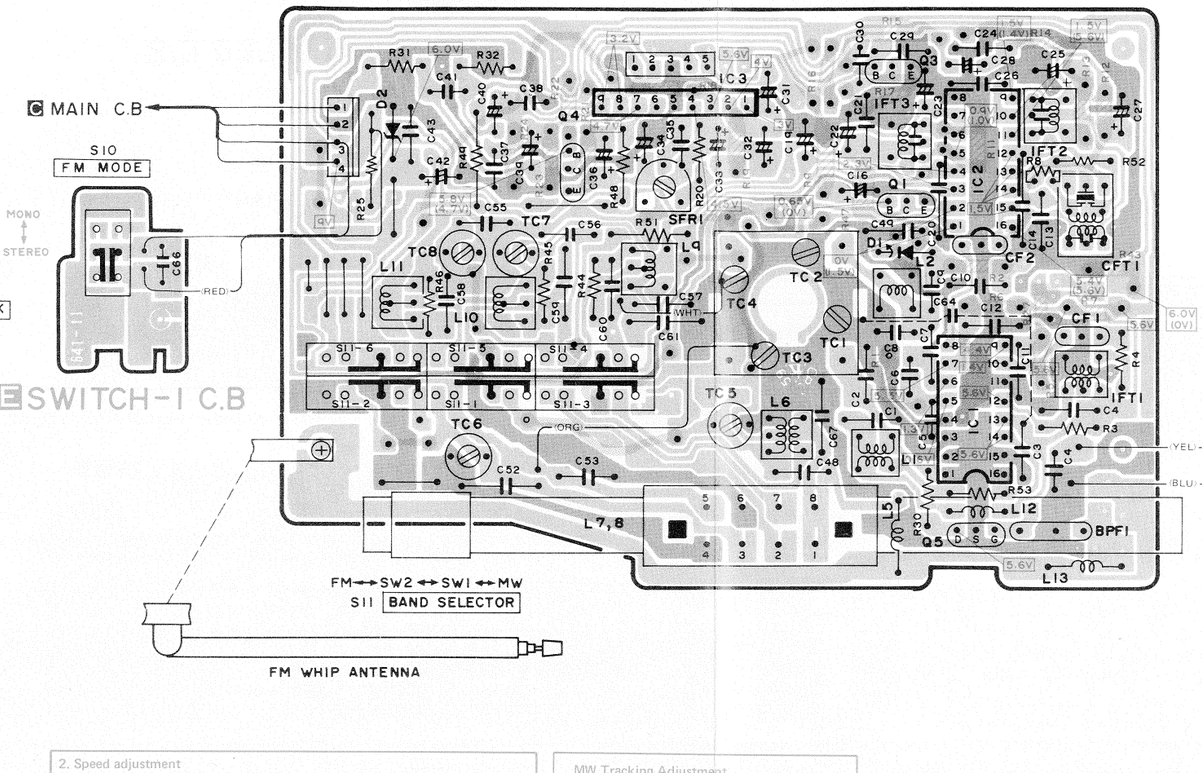
adian house voltage.

I POWER C.B

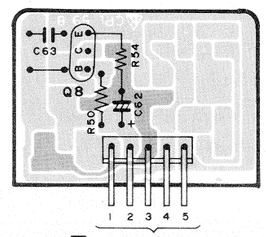


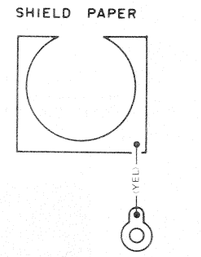


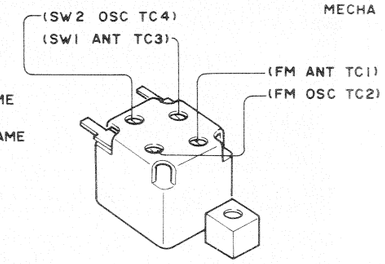
A TUNER C.B



B SWITCHING C.B







2. Speed adjustment

Settings:

	High speed		Normal speed	
Item	Deck A (PLAY)	Deck B (REC/PLAY)	Deck A (PLAY)	Deck B (REC/PLAY)
Adjustment procedure	1	2	3	4
Test tape	TTA-111H	TTA-111H	TTA-111S	TTA-111S
Speed adjusting fastening pin (blue wire)	Pull out fastening pin	Pull out fastening pin	Insert fastening pin	Insert fastening pin
Position to be adjusted	No adjustment	SFR-2	SFR-1	SFR-3
DUBBING switch	Double speed	Double speed	Normal speed	Normal speed

Note:
Speed adjustment: Be sure to adjust normal speed before adjusting high speed. Adjustment may drift when it is done in reverse.

Method:
1 High speed adjustment
Deck A: Load TTA-111H, pull out the blue wire, fastening pin and play it back to check that the speed deviation is −8% or more.
Deck B: Load TTA-111H, and adjust SFR2 so that the deviation is ±0.5% to the speed of deck A.

2 Normal speed adjustment
Deck A: Load TTA-111S, insert the blue wire, fastening pin and play back the tape. Adjust SFR1 so that the speed deviation is ±0.3%.
Deck B: Load TTA-111S and play it back. Adjust SFR3 so that the speed deviation is ±0.3%.

MW Tracking Adjustment
L8 ..... 600 kHz
TC6 ..... 1,400 kHz

SW1 Tracking Adjustment
L6 ..... 7.0 MHz
TC5 ..... 22.0 MHz

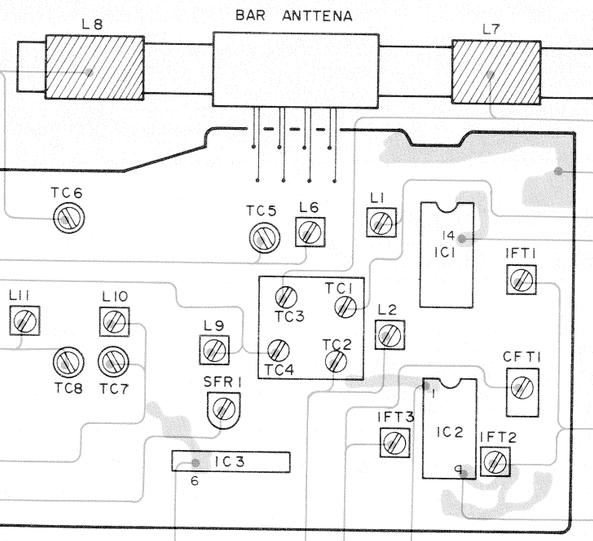
SW1 Freq. Range Adjustment
L9 ..... 6.8 MHz
TC4 ..... 22.5 MHz

MW Freq. Range Adjustment
L11 ..... 515 kHz
TC8 ..... 1,650 kHz

SW1 Freq. Range Adjustment
L10 ..... 2.1 MHz
TC7 ..... 7.3 MHz

V.C.O. Frequency Adjustment
SFR1 ..... 38 kHz ± 40 Hz

TP6 V.C.O. Test Point



FM Freq. Range Adjustment
L2 ..... 87.0 MHz
TC2 ..... 109.0 MHz

AM IF Adjustment
CFT1, IFT3 ..... 468 kHz

SW1 Tracking Adjustment
L7 ..... 2.3 MHz
TC3 ..... 7.0 MHz

TP1 FM RF Input

FM Tracking Adjustment
L1 ..... 88.0 MHz
TC1 ..... 108.0 MHz

TP2 FM IF Input

FM IF Adjustment
IFT1, 2 ..... 10.7 MHz

TP4 AM DET Output

TP5 FM DET Output

TP3 AM IF Input